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## Patient's Perceived Satisfaction towards Dental Treatment Provided by Undergraduate Students

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### Article Info

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### Abstract

This study aimed to evaluate patient's perceived satisfaction towards dental treatment provided by undergraduate students and to investigate the factors influencing patients' perceived satisfaction regarding the treatment received besides collecting suggestions for improvement of dental services. This is a cross-sectional study targeting dental patients who seek dental treatment in Hospital Universiti Sains Malaysia's (Hospital USM) Dental Clinics. Two hundred patients were interviewed by using a structured, interviewer-guided, adapted questionnaire. 48% of the subjects were between 18-25 age group and 59.5% of all subjects were earning <RM (Ringgit Malaysia) 1000 per month. 78.5% of the respondents were satisfied with the dental treatment provided whereby 53% and 21.5% were satisfied and very satisfied respectively. 7.0% of the respondents were dissatisfied. Dental specialists, dental officers, post graduate students and undergraduate students produced 1.0%, 9.7%, 0% and 4.1% of dissatisfaction respectively. The major causes of satisfaction are friendly clinic staff (46.0%), competent operator (39.5%) and low treatment cost (31.0%). As for patient dissatisfaction, the major causes are long waiting time (40.0%), failure of operator to complete treatment on time (25.0%) and poor service from clinic staff (15.0%). In general, majority of the respondents were satisfied with the treatment given to them. However, improvements are needed in some areas.

**Keywords:** Undergraduate Dental Students; Patient's Satisfaction; Survey.

### Introduction

Satisfying dental patients is a key task for all dental healthcare providers. Patient's satisfaction will also influence their compliance towards dental treatment indirectly and in turn the treatment outcome, especially for dental treatments that require multiple visits to the clinic in a specific period of time where patient's cooperation is crucial, such as orthodontic and endodontic treatment. Furthermore, dental patients nowadays are becoming increasingly concerned regarding the type of dental treatment received and the prognosis and outcome of the treatment itself. Therefore, it is very important for dental clinics to evaluate the level of patients' satisfaction towards dental treatment and services provided from time to time such that necessary measures can be carried out to improve the services provided, from the dental operator's technical skills to the facilities provided in the clinic to ensure that dental patients are satisfied.

Majority of the studies on patient's satisfaction on dental treatment have started since 1980's, but most of the studies focused more on the roles of socio-demographic variables in determining patient's satisfaction towards dental treatment provided. According to Bush and Nitse [1], it was concluded that there was very little empirical information available regarding consumer's acceptance of retail dental practices. This was further confirmed by Morgan et al [2] that despite the consensus that patient satisfaction surveys are important

in quality assurance in services and hospitals in the medical field, little work has been focused on patient's satisfaction with dental services.

According to a previous study, it was found that 46% of the dentists surveyed indicated that dissatisfaction with the way patients were handled by their dentists was often seen as the reason of switching dentists. In another more recent study, those patients surveyed cited "unhappy with dentist" as being the main reason of changing dentists. Moreover, some studies suggest that more personal care will result in better communication between the dental operators and dental patients, and hence increasing patients' involvement in the treatment, resulting in higher treatment quality.

The technical competency of a dentist is often cited as a key factor in achieving patient's satisfaction. However, according to Abrams et al [3], they quoted that, "Simply practicing dentistry with a high degree of technical expertise will not necessarily convince the patient that he has received high quality dental care. Other less technical aspects of dental treatment are recognised as being barometers of quality of dental treatment. Practitioners should not lose sight of the human and psychological aspects of care, and keep in mind that they are integral components of quality in dental treatment". This means that the technical competency of a dental operator should not be the sole factor in determining the quality of dental treatment done on the patient and there are still other important determinants.

Interpersonal factors, especially communication skills, have always been known to be important in reducing patient dissatisfaction towards a dental operator and the dental treatment provided. For example, Holt and McHugh [4] found that the most important factor influencing dentist/practice loyalty to be "care and attention" rated as very important by 90% of respondents, while three other related factors which are "pain control", "dentist puts you at ease" and "safety conscious" were each rated as being important by 73% of respondents. Barnes [5] found that a dentist's initiative to talk to their patients and sensitivity expressed towards paediatric dental patients to be important criteria in assessment of patient's satisfaction. In the study by Kress [6] of patient satisfaction with dental care, it was noted that dentist interpersonal skill should be cultivated since dental school as it will lead to patient's satisfaction towards dental treatment provided in the future when the dental students graduated as dentists. The ability of the dentist to make the patients feel safe and to put their trust on them are the factors that may contribute to patient satisfaction. The patients are fully capable of passing judgment and are consistently reported as being among the most important traits dentists should possess. The patients will also become more loyal and are willing to attend to regular dental checkups if this trait is possessed. The anxiety level in patients is hence reduced and dissatisfaction towards the dental treatment will be decreased.

As for convenience factors, some studies have explored different patient responses towards hospital clinics, neighborhood health centers, private practices, and shopping mall practices to

find out those patients finding favor with convenience-oriented characteristics in a dental clinic, especially to those that are opened after their "busy hours". However, a study by Janda et al [7] found that dentists should not emphasize on convenience-oriented attributes such as location and parking facilities but should pay more focus on the characteristics of the core service such as quality of service, professional competence, personality and the attitude of the dentist.

While the cost of dental treatment are often seen as high by most dental patients, fees do not appear to be a major problem with patients as compared to communication about fees. It was found that the two lowest-rated items in a survey to be "Knowing in advance what the fee will be" and "Believing that the fees are appropriate" [8]. In a study by Burke and Croucher [9] of patient's views about preventive dental care, it was noted that patient's ultimate fear was being exploited by their dentists, with respondents being in ignorance of the overall level of charge, angry about the way the final bill was presented and confused about whether the completion of a course of treatment carried with it any form of guaranteed dental fitness for the next six months.

Although not considered to be as important as other factors in determining patient's satisfaction, the facilities in the dental clinic, for example the neatness, comfort of seating, magazine selection, background music and other aspects have been shown to influence patient's satisfaction as well.

Simply knowing about the general components of patient satisfaction is not enough; one needs to know about the views of one's own patients so that effective steps can be taken to improve them. The steps may include changes in office policies or procedures, facilities or staff changes, or even changes in the dentist's interpersonal approach. In any case, the evidence suggests that efforts to improve will be rewarded by more satisfied patients who will be more likely to stay as clients and, perhaps, more readily accept treatment and more frequently refer friends to the practice. The consistent role of dentist's interpersonal skills suggests that dental schools could contribute to patient satisfaction by providing more interpersonal skills development in their curricula.

The aim of this study was to evaluate patient's perceived satisfaction towards dental treatment provided by undergraduates in Hospital USM Dental Clinics. The specific objectives included, to investigate the factors influencing patient's satisfaction towards dental treatment provided by undergraduates in Hospital USM Dental Clinic and their relationship with patient's satisfaction, to identify the most influential factor in determining patient's satisfaction towards dental treatment provided in Hospital USM Dental Clinic and to investigate the roles of socio-demographic aspects in determining patient's satisfaction. Besides, as mentioned previously, this survey serves an important role in collecting suggestions for improvement of services provided in Hospital USM Dental Clinic.

## **Materials and Methods**

A cross sectional study was conducted from the 28<sup>th</sup> of June 2015 to the 9<sup>th</sup> of July 2015, targeting 200 adult patients

aged 18 years and above whom seek dental treatment in Hospital USM Dental Clinic, including first timers and those whose last visit was long time ago. Those who refused to participate in the study and the illiterate were excluded. In this research, patient's satisfaction towards dental treatment provided by 5 different groups of dental operators, which are dental nurses, undergraduate dental students, postgraduate dental students, dental officers and dental specialists were investigated. A few factors were taken into consideration when evaluating dental patient's perceived satisfaction, such as socio-demographic factors, technical competency of dental operators, interpersonal factors, convenience in gaining access towards dental treatment in Hospital USM Dental Clinic, cost of treatment and the condition of the facilities provided. In return, suggestions were collected from the respondents in order to improve on the services provided in Hospital USM Dental Clinic which in turn increases patient's satisfaction in the future. Hence, a structured, interviewer guided, adapted questionnaire was used in the data collection process. A pilot study was previously done on 20 randomly selected undergraduate dental students to test on the newly adapted questionnaire whether the instructions and questions are clear and easily understood to avoid doubts in the respondents. Amendments and improvements were made according to the feedback collected. The final questionnaire was divided into 3 sections. Section A was about the respondents socio-demographic background, Section B concerned about the background of dental care received in Hospital USM Dental Clinic and Section C contained questions regarding patient's perceived satisfaction towards dental treatment received. Free toothpastes and button badges were provided as a token of appreciation to the respondents. Data collected was recorded and analyzed using the SPSS software version 22.0 which consists of transcript coding, detailed memo writing and data interpretation.

## Results

200 respondents were interviewed for this research, consisting of 119 (59.5%) females and 81 (40.5%) males. Majority of the respondents were Malays (70%), followed by Chinese (25%), Indians (1.5%) and other races such as Siamese and Kadazan (3.5%). This represents the multiracial society in Malaysia. Most of the respondents were from a young age group of 18-25 years old with a percentage of 48% (96), followed by the age group of 36-40 years old with a percentage of 12.5% (25) and the age group of 26-35 years old with a percentage of 12% (24). This shows that a majority of the respondents (72.5% or 145) are aged 45 years old and below. A smaller percentage of the respondents, which is 27.5% or 55 of them are aged 46 years old and above. As for the education level, more than half of the respondents (57.5% or 115) were reported to have a higher education level which includes 25 (12.5%) diploma holders, 85 (42.5%) degree holders and 5 (2.5%) are of postgraduate level. However, a vast majority of the respondents came from a lower income group where 57.5% or 115 of them were reported to have an income less than RM1000 per month. A smaller percentage which were

12.5% (25) of the respondents had an income of RM3000 and above per month. Only 2.0% of the respondents were reported to have no income.

Most of the respondents (Figure 1), 48.5% or 97 of them were treated by undergraduate students, followed by 31.0% (62) were treated by dental officers and 15.0% (30) were treated by dental specialists. Only a small percentage of respondents were treated by dental nurses and postgraduate student, with percentages of 1.3% (3) and 4.0% (8) respectively. More than half of the respondents, 64.7% or 127 of them were treated by female operators, while the remaining 36.5% or 73 were treated by male operators.

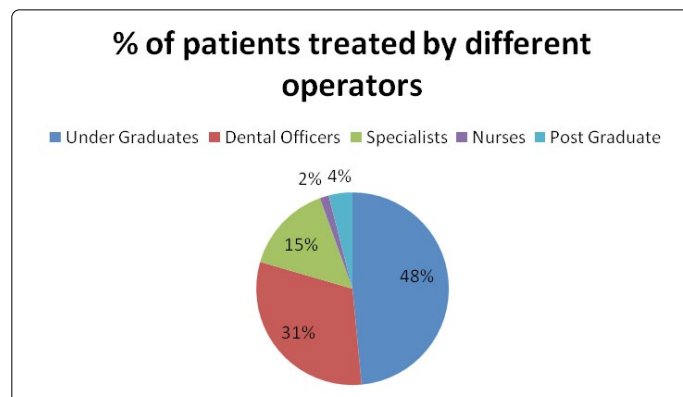


Figure 1: Percentage of patients treated by different operators

As for the treatment received, most of the respondents had received multiple dental treatments from Hospital USM Dental Clinic. Dental restoration is the most common treatment received by the respondents, with a percentage of 45.5%, followed by dental check-up (42.0%), scaling (35.5%) and extraction (20.5%). Other treatments received by dental patients included prosthodontics treatment, minor oral surgery, root canal treatment and orthodontics treatment.

A majority of respondents were satisfied with the dental treatment provided by Hospital USM Dental Clinic. There were 57.5% (115) of the respondents who were satisfied and another 21.5% (43) of them were very satisfied. 14.0% or 28 of the respondents gave neutral responses, 6.5% of them said that they were dissatisfied and the remaining 0.5% or one of the respondents was very dissatisfied. Furthermore, most of the respondents said that their overall experience upon seeking treatment in Hospital USM Dental Clinic was positive, with 52.0% or 104 of them saying that their overall experience was good and 13.5% or 27 of them answered "very good". 32.0% of them answered "satisfactory" and only 2.5% of them claimed to have bad overall experience in Hospital USM Dental Clinic.

The top three (3) reasons which contributed to the respondent's satisfaction were friendly staff or operator (24.7%), good technical competency of the dental operator when providing dental treatment (21.2%) and low treatment cost (16.7%). Other common reasons include complete clinical facilities (12.9%), operator possessing excellent communication skills (11.6%) and short waiting time (9.4%). As for those who were dissatisfied, most of them complained that the waiting time was too long, especially for those who were walk-in

patients who needed urgent treatment. Other reasons are treatment cannot be completed on time, poor service from staff or operator and treatment failure.

Less than half of the respondents, which is 86 or 43.0% had given suggestions. Majority of them suggested that the technical competency and clinical skills of dental operators, especially undergraduate students should be improved so as to reduce the appointment duration as most of them need to take leaves from their workplace to attend to the dental appointment. Some had also complained that the treatment cubicles in the student clinics and treatment rooms in the outpatient and specialist clinics were too congested, causing them to be uncomfortable when coming for consultation and treatment. A few had complained that they had been waiting for 1-2 years before being called to have dental restorations done in the student clinics and some had ended up needing more invasive treatment for a particular tooth which initially needs a simpler treatment.

All respondents who were treated by postgraduate students were satisfied, with 75.0% of them reported to be satisfied and 25.0% of them being very satisfied. This is followed by the dental specialist group with a total satisfaction rate of 90.0%, whereby 66.7% of the respondents were satisfied and 23.3% of them being very satisfied. As for the undergraduate students, there is a total satisfaction rate of 82.4%. The total satisfaction rate for dental officers is reported to be the lowest compared to the other groups, which is 66.1% (Figure 2). In fact, the total dissatisfaction rate for dental officers is also the highest among the operator groups, which is 11.3%, with 1.6% of the respondents being very dissatisfied and 9.7% being dissatisfied. The dental specialist group possesses the second highest total dissatisfaction rate, which is 10.0%.

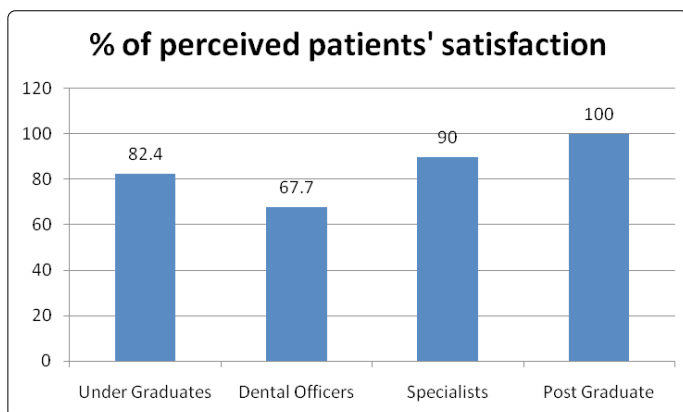


Figure 2: Percentage of perceived patients' satisfaction by different operators

In general, the total satisfaction rate for male dental operators is slightly higher in comparison with that of female dental operators. The total satisfaction rate for male dental operators is 79.4% with 57.5% of the respondents being satisfied and 21.9% of them being very satisfied. As for female dental operators, the total satisfaction rate is 78.7%, with 57.4% of the respondents being satisfied and 21.3% of them being very satisfied. On the other hand, the total dissatisfaction rate for female dental operators is higher, which is 7.9% in

comparison with that of male dental operators, which is 5.5%, whereby 1.4% of them being very dissatisfied and 4.1% of them being dissatisfied.

Only 39.5% or 79 of the total respondents perceived that their dental operators are technically competent in performing dental procedures. More than half of the respondents treated by dental nurses and postgraduate dental students perceived their dental operators as competent in providing dental treatment, with percentages 66.7% and 62.5% respectively. The dental officers have the lowest percentage of respondents perceiving them as technically competent, which is only 28.6%, in comparison with other operator groups. On the other hand, the undergraduate dental students have a slightly higher percentage of respondents, which is 43.8%, who perceived them as being technically competent compared to dental specialists, who have a percentage of 40.0%. As for gender, it is reported that male dental operators have a higher percentage of dental patients perceiving them as competent in performing dental procedures which is 45.9%, compared to female dental operators, who have a percentage of 35.2%.

A majority of the total respondents, 78.5% perceived that their dental operators have poor communication skills when providing dental treatment. Only 21.5% of them perceived that their dental operators have good communication skills. None of the respondents treated by dental nurses said that their operators have good communication skills. Besides that, 80.0% of the respondents who had treatment under dental specialists perceived that they have poor communication skills. Among all dental operator groups, the postgraduate dental students have the highest percentage of dental patients perceiving them as having good communication skills, followed by undergraduate dental students, with percentages of 25.0% and 22.9% respectively. The dental specialists have the lowest percentage of respondents who perceived them as having good communication skills, which is only 20.0%. As for gender, male dental operators have a higher percentage of dental patients, which is 25.7%, who perceived them as having good communication skills compared to female dental operators, with a percentage of 19.2%.

Half of the respondents who think that the waiting time was long were treated by dental officers. 25.0% of them were treated by undergraduate students and another 25.0% of them were treated by dental specialists. None of the respondents who said that the waiting time were long were treated by dental nurse and postgraduate students. Besides that, majority of the respondents or 49.0%, who felt that the waiting time was short, did receive treatment from undergraduate dental students.

## Discussion

The method used in obtaining data for this research was through a cross sectional study, which is a type of observational study that involves analysis of data collected from a population or a representative subset at one specific point of time. This study was conducted with the use of an adapted, interviewer guided questionnaire. This research method is commonly

used worldwide because it is easily prepared, convenient and does not require expensive materials. Sample size was 200, which was calculated using the single proportion formula.

In terms of research tool, we used a structured, interviewer guided, adapted questionnaire for our study. The questionnaire used was created through adaptation from various sources. Before the actual period of study, a pilot study was carried out, recruiting 20 undergraduate dental students for participation, in order to determine whether the instructions to the respondents were clear and also whether the language used is appropriate and easily understood by layman. The questionnaire was then edited according to the feedback obtained.

The duty and responsibilities of different study subjects which are dental specialists, post graduate students, dental officers, nurses and undergraduate students are as follow. Specialists treat referred patients from all other operator groups. Post graduate students treat patients which are assigned to them by specialists which could be of lower complexity. Dental officers only do regular dental practitioner procedures such as primary care and routine dentistry not up to specialist level. Nurses only treat children of the age 16 years old and below. Under graduate students see patients under the supervision of their lecturers.

In terms of socio-demographic aspect, we found out that a majority of the respondents were Malay and females regardless of ethnicity. This implies that females possess more treatment seeking behaviour compared to males. Besides, it was also reported that most of the respondents were from a younger age group, which is 18-25 years old, and a majority of them received higher education.

It is revealed that 85.5% of the dental patients who attended to Hospital USM Dental Clinic had multiple visits previously. In fact, more than half of the respondents came for regular dental check-up, which implies that many people are actually aware of the importance of regular dental visits in preventing the development of oral diseases such a dental caries and periodontal disease. Most of the respondents were patients of undergraduate dental students as the number of undergraduate students is highest compared to that of other operator groups. In addition, 64.5% of the respondents were treated by female dental operators as there are more female dental operators compared to that of males in the dental clinics.

It is revealed that 78.5% of the respondents were satisfied with the dental treatment provided, with 57.0% of them being satisfied and 21.5% of them being very satisfied. Only 6.5% were dissatisfied and 0.5% was very dissatisfied with the service provided. This shows that majority of the dental patients in Hospital USM Dental Clinic are satisfied with the dental treatment provided. However, as compared to a similar study done in the United Kingdom in year 2005, 89.0% of the dental patients interviewed were satisfied [10]. This means that, the satisfaction level of dental patients in Hospital USM Dental Clinic still needs improvement.

The major causes for patient satisfaction are friendly staff or operator (46.0%), technically competent operator (39.5%) and low treatment cost (31.0%). On the other hand, only a small portion of patients, 7.0% of them were dissatisfied, mostly caused by long waiting time before being called for treatment.

Most of the respondents, especially those who received treatment from undergraduate dental students claimed that they waited less than 30 minutes before they were called for dental treatment and there was actually 4.0% of them complained that they usually waited more than 120 minutes. This is because undergraduate dental students usually welcome their patients in right after they registered at the counter and those who waited long were usually walk-in patients due to limited dental officers and available treatment rooms at the outpatient clinic. Hence, it is very important for the clinic administrations to hire more dental officers and specialists besides increasing the number of treatment rooms as suggested by some respondents. Furthermore, the efficiency of the counter service and improving the waiting list system should also be taken into consideration.

Respondents were also asked whether they are willing to attend to Hospital USM Dental Clinic in the future for dental treatment. It is reported that a great majority of them, which is 93.5% were willing to visit Hospital USM Dental Clinic again, because they were satisfied with the treatment received (41.0%), easily accessible (30.5%) and also due to its low treatment cost (21.0%). Only 6.5% of them replied that they are not going to return to Hospital USM Dental Clinics again. Their reasons include inconvenience, dissatisfied with the service and completed course of treatment. This shows that there are still some dental patients who are not aware of the importance of regular dental visits in the future even after completing the necessary treatments. As for the suggestions, most of them pointed that the technical competency of dental operators, especially dental students should be further improved such that they do not need to come for long appointment duration as most patients needed to apply for leaves to attend to the scheduled appointment.

## **Conclusion**

In general, over 80% of the respondents were satisfied with the treatment given by undergraduates. This is better than the performance of dental officers. Among the reasons were shorter waiting times, better communication skills and better explanation to the treatment procedures. However, there were concerns about the lack of skills by the undergraduates which caused the treatment to be prolonged and require multiple visits as well. Therefore it is very important to educate undergraduates about patients' satisfaction as a preparation for their future careers.

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